



# LEWS NEWS



Photo: Kristin Stanford, Northern Illinois University

Volume VII

June 2003

## Protecting Lake Erie's Natural Heritage

### Focus on Recovery

Welcome back to the fourth year of LEWS News, the Lake Erie water snake Newsletter! Since the LEWS was listed as a threatened species in 1999, the U.S. Fish and Wildlife Service (Service), and Ohio Department of Natural Resources Division of Wildlife (DOW) have often been asked, "when can the LEWS be taken off the threatened species list?" This seems to be the question on everyone's mind, and a good question it is! The ultimate goal of listing any species as threatened or endangered is to restore or "recover" the population so that the protection of the Endangered Species Act (ESA) is no longer necessary. Part of the process for recovering a species is development of a recovery plan. The Service must write a recovery plan for each endangered and threatened species, and this plan must describe the actions necessary and the goals that must be achieved before the species can be removed ("delisted") from the list of threatened and endangered species. The Lake Erie water snake Draft Recovery Plan is currently being published, and will soon be available for public review and comment. The Service wants to make sure that this plan is complete and scientifically accurate. To this end, we ask that you review the draft plan, and submit written comments to us on the suitability of the plan. A copy of part of the Executive Summary from the Draft Recovery Plan is included on page 5 of this issue. Read on for more information!

### Public Input Sought on Draft Lake Erie Water Snake Recovery Plan

The U.S. Fish and Wildlife Service will soon be seeking written public comment on the Lake Erie water snake Draft Recovery Plan (plan). The plan addresses four topics: site-specific management actions necessary to conserve and recover the species; an estimated time-frame for recovery; precise, measurable criteria and research needs that will allow the Service and others to objectively determine when recovery has been achieved; and an estimated cost of the complete recovery of the species. Part of the Executive Summary from the plan is included on page 5. The plan will guide all federal and state agencies whose actions affect the conservation of the Lake Erie water snake. The goal of the plan is to bring populations of the species to a point where protection of the ESA is no longer necessary.

We anticipate that the plan will be available in early June. A press release will notify the public when the plan is available, and when the 60-day comment period opens and closes. Any person or group may submit written comments on the plan during the comment period. These comments will be considered prior to completing the Final Recovery Plan. Written comments can be submitted by mail to: Field Office Supervisor, U.S. Fish and Wildlife Service, 6950 Americana Parkway, Suite H, Reynoldsburg, OH 43068-4127, or by email to [lewatersnake@fws.gov](mailto:lewatersnake@fws.gov).

(Cont. from pg. 1)

Once the Lake Erie water snake Draft Recovery Plan becomes available, copies may be obtained from the Service's website at [www.endangered.fws.gov](http://www.endangered.fws.gov) or purchased from the Fish and Wildlife Reference Service, 5430 Grosvenor Lane, Suite 110, Bethesda, MD 20814 (telephone 800-582-3421). TTY users may contact us through the Federal Relay Service at 1-800-877-8339. A copy of the plan may also be viewed at the following Ohio libraries: South Bass Island Public Library, Put-In-Bay School, Catawba Avenue, Put-In-Bay; Sandusky Library, 528 Division Street, Kelleys Island; Sandusky Library, 114 W. Adams St., Sandusky; and Port Clinton Public Library, 310 Madison Street, Port Clinton.

The Service will be hosting a public meeting to explain the contents of the plan to interested individuals. At this meeting, copies of the plan will be available for viewing, the Service will give a presentation on the contents and the purpose of the plan, and will answer questions. The public meeting will be held Wednesday, June 18, 2003, from 4 pm to 6 pm at the Kelleys Island School gymnasium, located at the Ward Road and Division Street intersection, Kelleys Island, Ohio.

Megan Seymour, Wildlife Biologist  
U.S. Fish and Wildlife Service



Photo: Kristin Stanford, Northern Illinois University

## Lake Erie Water Snake Research Update

*Movement patterns and hibernation sites.* - Research aimed at determining Lake Erie water snake movement patterns and hibernation sites will be wrapped up during the spring and summer of 2003. Since 2000, radio transmitters have been surgically implanted in 63 adult Lake Erie water snakes from Kelleys Island, South Bass Island, Middle Bass Island, North Bass Island, and Gibraltar Island. By monitoring the movements of these snakes, information on the amount of shoreline used during summer and the extent of inland movements during summer and to and from winter hibernation sites has been obtained. This information has been incorporated into the Lake Erie water snake Draft Recovery Plan and into guidelines for island landowners aimed at minimizing impacts on snakes.

*Population estimation.* - Efforts to census current Lake Erie water snake population size will continue during spring 2003. Study sites on Kelleys Island, South Bass Island, Middle Bass Island, and North Bass Island, some of which have been monitored since 1980, will be visited repeatedly. We like to call this snake round-up "Nerodio," (based on the scientific name of the snake, *Nerodia sipedon insularum*--a little scientific humor!). Water snakes captured at these sites will be measured and individually marked. Based on the number of previously marked snakes and newly captured snakes in each census, adult population size can be estimated. For example, suppose 40 snakes are captured and marked on one day and two days later 50 snakes are captured. If 10 of the 50 snakes in the second census were marked during the first census ( $10/50 = 20\%$ ), then the 40 snakes captured during the first census must represent 20% of the total population, giving a population estimate of 200. Information from censuses in different years can also be used to estimate population size but the calculations are a little more complex because some snakes may have died while others may have just reached adulthood.

*Survivorship.* - Population censuses during 2003 will be especially valuable because when combined with

information collected during 2001 and 2002, they will allow researchers to estimate how many adult Lake Erie water snakes survive from one year to the next. Such information can aid managers in determining how best to ensure population persistence over time. For example, are efforts better aimed at reducing mortality among young or adult snakes?

*Impacts of Round Gobies.* - Round gobies, a fish native to the Baltic Sea, were inadvertently released into the Great Lakes in the early 1990's and are now well established in the island region of Lake Erie. Gobies were first documented in the diet of Lake Erie water snakes in 1996. During 2003, research efforts will focus on determining the importance of gobies as food for water snakes. Water snakes that have recently eaten sometimes spontaneously regurgitate when handled. Alternatively, they can be induced to regurgitate by using gentle pressure to force food items out - a technique known as 'barfing' to snake biologists. In this way, researchers will determine to what degree Lake Erie water snakes feed on gobies, whether gobies are consumed equally by juveniles and adults, and whether goby consumption varies from location to location. Gobies might seem like a super-abundant food source for water snakes but they could also have negative effects. In particular, because gobies feed on zebra mussels which feed on microscopic aquatic organisms, environmental toxins may accumulate in water snakes through a process

called 'biological magnification.' Blood samples collected from Lake Erie water snakes during 2003 will be frozen and stored for future contaminant analysis to determine whether biological magnification of toxins is a threat to the LEWS population.

Richard B. King  
Northern Illinois University

## NERODIO 2003



Thank you to all the island residents who made Nerodio 2003 a success! We could not have done this without your continued support! We're already looking forward to next year!

### Ask the Island Snake Lady!

Hello Everyone! Many of you may not know that I have created a new e-mail account for answering your questions and concerns about LEWS. This is to provide you with an easy way of getting answers to your much sought after questions concerning the snakes. I have already answered several e-mails from island residents who had questions and look forward to receiving many more. I publish some of the questions and answers that I think many people may find useful. Look for the "Ask the Snake Lady" column in both the Put-in-Bay Gazette and Kelley's Life!

Additionally, I have been giving presentations concerning LEWS and many of the other snakes on

the islands to groups such as the Cub and Tiger scouts, school classes and other organizations. Watch for scheduled talks to be given this summer at the State Fish Hatchery on South Bass Island and at Kelleys Island State Park. If you would like to request a presentation for your group or organization please contact me ASAP!

Finally, if you would like a "Water Snakes Welcome Here" sign, let me know and I'll get one to you. Thanks!

Kristin Stanford  
A.k.a. "the island snake lady"  
[theislandsnakelady@yahoo.com](mailto:theislandsnakelady@yahoo.com)



### Attention Lake Erie Island Shoreline Property Owners

The Lake Erie Islands Chapter of the Black Swamp Conservancy (LEIC-BSC) and the Ohio Department of Natural Resources, Division of Wildlife (ODNR-DOW) have signed an agreement on Lake Erie water snake conservation easements for the Lake Erie Islands. ODNR-DOW has granted some monies to the Lake Erie Islands Chapter to use for expenses associated with securing donated easements (ex. survey or appraisal costs) on the Lake Erie Islands. The grant is from the state's Wildlife Diversity program. More money could become available through additional grants.

A meeting was held on Saturday May 17, at the Lake Erie Islands Historical Society at 10:00 am to discuss this easement program. Gary Miller from Eastman and Smith Ltd. discussed how these easements could provide tax benefits for the landowner. The title of the presentation was "How Protecting Your Land Can Save You Taxes." Kristin Stanford, aka "the snake lady" from Northern Illinois University talked about preferred habitat for the threatened Lake Erie water snake and brought along a water snake for all to see. Carolyn Caldwell of ODNR-DOW was also present to answer questions about the state's support of the grant program.

Providing habitat through easements could be an important part of a recovery plan for the snake. Establishment of conservation easements will aid in recovery of the Lake Erie water snake and will help to remove the snake from the Federal list of threatened species. Target numbers of acres to be protected with conservation easements have been set for each of the Lake Erie islands.

A conservation easement is a restriction that a landowner can voluntarily place on their property. It is a legal agreement between a landowner and a land conservancy that permanently protects its conservation values. A building envelope can be reserved for future construction within an easement. An easement can be placed on either a portion of a property or the entire property. A landowner keeps the title to the property and there is no public access.

An easement can be customized for each individual landowner. Any donation of a conservation easement is tax deductible. The easement program sponsored by the ODNR-DOW and LEIC-BSC is to be used to preserve properties with Lake Erie water snake habitat either along the shoreline or their hibernation sites. If you have any questions about this new program or are interested in participating, give us a call or e-mail!

Lake Erie Islands Chapter of the Black Swamp Conservancy  
P.O. Box 461  
Put-in-Bay, OH 43456  
(419) 285-5811  
leic\_bsc@cros.net



Kristin Stanford, the "Island Snake Lady" holds a banded LEWS on Green Island.

### From Executive Summary in Lake Erie water snake Draft Recovery Plan

**Current Species Status:** The Lake Erie water snake (*Nerodia sipedon insularum*) occurs on portions of the Ohio mainland, and on the near-shore and offshore islands and in the waters of the western Lake Erie basin of Ohio and Canada. Based on extirpation events on several small islands and significant declines from historic population estimates due to habitat loss and human persecution, the snake was listed as a threatened species under the Endangered Species Act in 1999. This listing extended only to the subpopulations found on the western Lake Erie offshore islands and adjacent waters of the United States. The Province of Ontario, Canada designated the Lake Erie water snake an endangered species in 1977 based on similar threats.

**Habitat Requirements and Limiting Factors:** The Lake Erie water snake spends summers basking on the rocky shorelines of the limestone and dolomite islands in the western Lake Erie basin. Both natural shoreline and some portions of developed shoreline provide suitable summer habitat for the snake. Hibernation habitat for the snake is composed of areas inland from the shore, which typically have soil and rock substrates and consist of natural openings or fissures. Additionally some snakes hibernate in human-made structures such as foundations and drainage tile. The primary limiting factors are loss of suitable summer and hibernation habitat through development, and both accidental and intentional human persecution.

**Recovery Strategy:** The primary strategy for the recovery of the Lake Erie water snake in the U.S. is to sustain multiple subpopulations of the snake, including a stable, persistent subpopulation of snakes on each of the four largest U.S. islands, by significantly reducing deliberate and accidental human-induced mortality, and by maintaining enough essential habitat to support these subpopulations in perpetuity. This strategy will be accomplished by working with government agencies to develop management plans for public lands on the islands, continuing a vigorous outreach campaign targeting residents and visitors to the islands, encouraging private land actions that benefit snake habitat, and conducting additional research to assess other potential threats to the continuing existence of the Lake Erie water snake population.

**Recovery Objective:** The objective of this recovery plan is to ensure multiple viable subpopulations of the Lake Erie water snake on the U.S. islands such that the snake can be removed from the Federal list of *Endangered and Threatened Wildlife and Plants*.

**Recovery Criteria:** Recovery of the snake will be accomplished when a minimum of 5,555 adult snakes exists on nine U.S. islands combined for six or more consecutive years, including at least 900 snakes on Kelleys Island, 850 snakes on South Bass Island, 620 snakes on Middle Bass Island, and 410 snakes on North Bass Island, with the remaining snakes occurring on any of the nine islands. Additionally, a total of 7.4 km of shoreline habitat and 51 hectares of hibernation habitat distributed proportionately among the four largest U.S. islands must be protected in perpetuity by a written agreement approved by USFWS. Finally, objective analysis of public attitude indicates that human persecution is no longer a threat to the continued existence of the snake, and accidental human-induced mortality no longer poses a significant threat to the population.

#### Actions Needed:

1. Monitor Lake Erie water snake subpopulations on U.S. islands
2. Protect and manage the Lake Erie water snake and its habitat to perpetuate viable subpopulations
3. Administer a public outreach program aimed at reducing intentional and accidental human-induced mortality
4. Collect important ecological data on the Lake Erie water snake and its habitat
5. Review and track recovery progress



Photo: Dr. Richard King, Northern Illinois University

### SNAKE CHECK-UP

Lake Erie water snakes can have very different color morphs, or banding patterns. As is visible in this picture of neonates (newborns), some snakes are plain gray or brown, others have dark banding patterns, and some have an intermediate pattern between these two extremes. These banding patterns are similar to hair color differences in humans. Even though these snakes may look different, they are all Lake Erie water snakes.



U.S. FISH AND WILDLIFE SERVICE  
6950 AMERICANA PKWY.  
SUITE H  
REYNOLDSBURG, OH 43068-4127